2019-2020 Assessment Report

Vascular Technology Program
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Vascular Technology Program

Bachelor of Science Degree

Section 1 - Program Mission, Objectives & Learning Outcomes

Oregon Tech Mission

Oregon Institute of Technology, an Oregon public university, offers innovative and rigorous applied degree programs in the areas of engineering, engineering technologies, health technologies, management, and the arts and sciences. To foster student and graduate success, the university provides an intimate, hands-on learning environment, focusing on application of theory to practice. Oregon Tech offers statewide educational opportunities for the emerging needs of Oregonians and provides information and technical expertise to state, national and international constituents.

Core Theme 1: Applied Degree Programs

Oregon Tech offers innovative and rigorous applied degree programs.

The teaching and learning model at Oregon Tech prepare students to apply the knowledge gained in the classroom to the workplace.

Core Theme 2: Student and Graduate Success

Oregon Tech fosters student and graduate success by providing an intimate, hands-on learning environment, which focuses on application of theory to practice. The teaching and support services facilitate students' personal and academic development.

Core Theme 3: Statewide Educational Opportunities

Oregon Tech offers statewide educational opportunities for the emerging needs of Oregon's citizens. To accomplish this, Oregon Tech provides innovative and rigorous applied degree programs to students across the state of Oregon, including high-school programs, online degree programs, and partnership agreements with community colleges and universities.

Core Theme 4: Public Service

Oregon Tech will share information and technical expertise to state, national, and international constituents.

Program Mission

The Bachelor of Science program in Vascular Technology provides students with a broad base of knowledge, hands-on clinical skills and professional behaviors to become competent life-long Learners as Registered Vascular Technologists to the State of Oregon and to hospitals and vascular labs across the Country.

Program Alignment with Oregon Tech Mission & Core Themes

The Oregon Tech Vascular Technology program constantly seeks new ways to implement the program's maximum credit hour courses in a dedicated vascular studies accredited degree through hands-on lab practice and simulation to provide vascular industry with the highest quality graduates anywhere in the Nation.

Section 2 - Program Description and History

The Vascular Technology Program officially began in 1992 and is one of the five current on-campus Medical Imaging programs at Oregon Tech. Enrollment trends from 2002 – 2020 have varied from 50 to 89 students per year in the program. By fall term of 2020, there were 59 students enrolled in the program. For the class of 2020, retention was 80.1% and attrition was 19.9%

- The number of students who entered the VT program for the cohorts of graduating classes from 1994 to 2020 was 661. Of those 661 students, 509 had graduated.
- Overall retention has therefore been 77.0% and attrition has been 23.0%

- Core VT program course failure rates per the 635 students accepted were as follows:
    - 8.0% or 53 failures in MIT 231, Sonographic Physics & Instrumentation I
    - 3.2% or 21 failures in MIT 232, Sonographic Physics & Instrumentation II
    - 2.9% or 19 failures in VAS246, Peripheral Arterial Disease 1
    - 2.4% or 16 failures in VAS420, Externship.
    - 2.4% or 16 failures in BIO 220, Cardiovascular Physiology.
    - 1.8% or 12 failures in VAS365. Abdominal Disease
    - 0.8% or 5 failures in PHY217, General Physics.
    - 0.7% or 5 failures in VAS245, Peripheral Venous Disease
    - 0.7% or 5 failures in VAS214, Vascular Anatomy
    - 0.5% or 3 failures in VAS225, Patient Management Practices
    - 0.5% or 3 failures in VAS366, Special Circulatory Problems
    - 0.3% or 2 failures in VAS 335, Radiographic Vascular Anatomy

- Combining the 661 students with the students accepted into the graduating classes of 2021, 2022 and 2023, a total of 725 students have been accepted into the VT program by the Fall term of 2020.

The Job placement for the class of 2019 at six months was 100%. The median salary for the graduates of the classes of 2017, 2018 & 2019 was $74,880 per year.

American Registry of Diagnostic Medical Sonography (ARDMS) Pass Rates, Employment Rates and Retention/Attrition Rates

Graduating Class of:	2015	2016	2017	2018	2019
Registry Pass Rates					
ARDMS Pass rate for Sonography Physics and Instrumentation*	100% (14/14)	100% (14/14)	100% (17/17)	100% (13/13)	100% (13/13
ARDMS pass rate for General Vascular*	100% (14/14)	100% (14/14)	100% (17/17)	100% (13/13)	100% (13/13)
Employment Placement					
Employment within first 6 months of graduation	100% (14/14)	92.8% (13/14)	88.2% (15/17)	100% (13/13)	100% (14/14)
Retention/Attrition					
Retention	71%	70%	85%	76.50%	77.80%
Attrition	29%	30%	15%	23.50%	22.20%
*Pass rates only apply to those student who sat for registry that calendar year					

Table 1

Program Enrollment

Program Enrollment - Head Count					
	2015	2016	2017	2018	2019
Sophomores	19	19	24	20	20
Juniors	19	17	16	15	13
Seniors	14	14	17	13	14
Total	52	50	57	48	47

Table 2

Survey Student Quotes from the Exit Surveys & Evaluations

Name 3 strengths of the program:

1. Giving us a deep understanding of why everything works the way it does instead of just remembering it.
2. Ample time working in the field before graduation, so by the time graduation comes around it isn't an adjustment to continue working.
3. Giving us connections to collaborate with other technologists or professionals in our field.

Suggestions that would help to better prepare future graduates

The program is rough and tough but once you make it through, you'll be thankful

Evaluation Comments

- Mr. Caster is a great teacher and adapted well to having to make this an online course!

- Mr Caster has always been someone you can count on. His goal has always very clearly been to educate, support, and encourage the students. He will always hold a place in our lives, and I respect him in many ways.
- It is nice to have information in advance about what is expected of us while on extern. I wish we could have taken it in the classroom setting, but Mr. Caster has done a great job making do with what we have to do.
- I feel ready and that is all that matters

Industry Relationships:

Oregon Tech's Vascular Technology program is affiliated with the following 2018-19 industry partners:

Peoria Vein Clinic, Peoria, IL
Arizona Doppler Specialists, Phoenix, AZ
Cedar-Sinai, Los Angeles, CA
Clevleand Clinic, Cleveland, OH
Franciscan Vascular Associates Tacoma
Hoag Heart and Vascular Institute, Long Beach, CA
James A. Haley Veteran's Hospital, Tampa, FL
Lake Washington Vascular Lab, Bellevue, WA
Milton S. Hershey Medical Center, Hershey, PA
Oregon Health & Sciences University Vascular Lab, Portland, OR
Oregon Heart & Vascular Institute Vascular Lab, Eugene, OR
Pacific Vascular, Inc., Bothell, WA
PeaceHealth Thoracic & Vascular Surgery
Providence Medford Vascular Lab, Medford, OR
Providence Medical Group Spokane Vascular Lab, Spokane, WA
Providence St. Vincent's, Portland, OR
Quality Vascular Imaging, Inc., Venice, FL
Renown Regional Medical Ctr. Vascular Lab, Reno, NV
Salem Hospital Vascular Lab, Salem, OR
Shasta Region Medical Ctr. Vascular Lab, Redding, CA
Specialists in Vascular Ultrasound, Inc., San Antonio, TX
Swedish Vascular Lab, Seattle, WA
St. Luke's Regional Medical Ctr. Vascular Lab, Boise, ID
University of California Davis Vascular Lab, Sacramento, CA
University of North Carolina Vasculr Lab, Chapel Hill, NC
University of Utah Medical Ctr. Vascular Lab, Salt Lake City, UT
University of Vermont Fletcher-Allen Health Care, Burlington, VT
University of Washington Medical Ctr. Vascular Lab, Seattle, WA

Section 3 – Program Student Learning Outcomes

Program Educational Objectives Students at the end of this course are able to:

1. Demonstrate diagnostic techniques, use sound judgment and good decision making to provide patient services.
2. Demonstrate great leadership skills in the field of vascular technology who contribute to the field on a local, regional or national level.
3. Synthesize and Analyze problems critically, communicate effectively and exemplify professional ethics.
4. Perform at a professional level and as lifelong learners and responsible citizens.

Programmatic Student Learning Outcomes

1. The ability to communicate effectively in oral, written and visual forms.
2. The ability to work effectively in teams.
3. An ability to provide basic patient care and comfort.
4. Professional judgment and discretion including ethics.
5. Knowledge and understanding of human gross anatomy sectional anatomy and normal and abnormal vascular anatomy.
6. Knowledge and understanding of vascular physiology, pathology, and pathophysiology.
7. Knowledge and understanding of vascular physical principles and instrumentation.
8. Knowledge and understanding of clinical vascular diagnostic procedures and testing
9. An understanding of diverse cultural and humanistic traditions in the global society.

Origin and External Validation

The current set of program student learning outcomes originated from outcomes set forth by the vascular technology program's programmatic accrediting body known as the Joint Review Committee on Education in Diagnostic Medical Sonography (JRC-DMS). The outcomes have remained consistent in JRC-DMS who has been the primarily external validation for the vascular technology program since it was accredited in 2015.

Changes

Although the vascular technology program was not accredited through JRC-DMS until 2015, the student learning outcomes put forth by JRC-DMS have been the same since the vascular technology program adopted them for assessment purposes in 2007. Therefore, there have been no recent changes to the current vascular technology program student learning outcomes.

Section 4 – Program Student Learning Outcomes Per Curriculum Map

F - Foundation
P - Practice
C - Capstone

Course	PSLO 1	PSLO 2	PSLO 3	PSLO 4	PSLO 5	PSLO 6	PSLO 7	PSLO 8	PLSO 9	ELSO 1 - Communication	ELSO 2 - Inquiry & Analysis	ELSO 3 - Ethical Reasoning	ELSO 4 - Quantitative Literacy	ELSO 5 - Teamwork	ELSO 6 - Diverse Perspectives
BIO 231					F										
CHE 101															
CHE 104															
MATH 111															
MIT 103															
BIO 232					F										
MATH 112															
WRI 121															
HUM															
SOC															
BIO 233					F										
BIO 200					F										
PSY 201/202/203															
SPE 111															
WRI 122															
PHY 217															
VAS 214					P		F	F			F		F		
BIO 220						F		F			F				
MIT 225			F	F					P			F			P
WRI 227	F									F					
BIO 346				F		F	F	F			F	F	F		
MIT 231							F						F		
VAS 246			F	P	P	F		F			F	P			
VAS 335															
MIT 232							P						P		

Course	PSLO 1	PSLO 2	PSLO 3	PSLO 4	PSLO 5	PSLO 6	PSLO 7	PSLO 8	PLSO 9	ELSO 1 - Communication	ELSO 2 - Inquiry & Analysis	ELSO 3 - Ethical Reasoning	ELSO 4 - Quantitative Literacy	ELSO 5 - Teamwork	ELSO 6 - Diverse Perspectives
BIO 347						F									
VAS 245			P		P	P	P						P		
SPE 321	F	F								F				F	
VAS 375				P								P			
VAS 365	P		P	P	P	P	P	P	P	P	P	P	P		P
BUS 316, 317 OR 313															
VAS 366	P			P	P	P	P	P	P	P	P	P	P		P
CHE 360															
VAS 337			P				P						P		
VAS 367			P	P	P	P	P	P	P		P	P	P		P
MIT 385	P	P								P				P	
VAS 388															
VAS 420	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

Table 3

Section 5 – Assessment Cycle

Vascular Technology Student Learning Outcomes Assessment Schedule	2019 – 2020	2020 – 2021	2021 - 2022
1. The student will demonstrate the ability to communicate effectively in oral, written and visual forms.	X		
2. The student will demonstrate the ability to work effectively in teams.	X		
3. The student will demonstrate an ability to provide basic patient care and comfort.	X		
4. The student will employ professional judgment, and discretion including ethics			X
5. The student will demonstrate knowledge and understanding of human gross anatomy sectional anatomy and normal and abnormal vascular anatomy			X
6. The student will demonstrate knowledge and understanding of vascular physiology, pathology, and pathophysiology.		X	
7. The student will demonstrate knowledge and understanding of vascular physical principles and instrumentation.		X	
8. The student will demonstrate knowledge and understanding of clinical vascular diagnostic procedures and testing		X	
9. The student will demonstrate an understanding of diverse cultural and humanistic traditions in the global society.			X
ESLO #1 Communication			
ESLO #2 Inquiry & Analysis			
ESLO #3 Ethical Reasoning			
ESLO #4 Quantitative Literacy			
ESLO #5 Teamwork	x		
ESLO #6 Diverse Perspectives			

Table 4

Section 6 – Assessment Activity

Activity: Throughout this assessment cycle the vascular faculty used minimal assessment rubrics. All the objectives of the program provides alignment with programmatic outcomes and mission.

Rubric: The activities were scored and evaluated by the vascular faculty separate from course grade. The rubrics provides illustration of the performance criteria, assessment methods, measurement scale, minimum acceptable performance, and results.

Sample: 15-20 students were used to complete each activity, which is 100% of the student cohort class. No special or unusual characteristics of the student population that should are noted.

Reliability: All vascular and MIT faculty score the activities separately if multiple scoring faculty were needed on certain activities. The averages were used to as a final score using the compiled data.

Multiple Sites: Measures are not used at all multiple sites/modes where program is offered, because the Klamath Falls campus is the only campus offering such program.

Performance Target: The results of our national registry have been 100% in the past 6 years, thus no performance targets have been modified.

Performance Level: Results are presented, and they directly relate to objectives. The desired results for objectives, are clearly presented, and were derived statistical analyses, as appropriate.

History of Results: Annual JRCDMS accreditation and 6 year reaccreditation validates the historical success of the Vascular program at Oregon Tech.

Faculty Discussion: All qualitative and quantitative data/information was provided to all program faculty, mode and details of communication at conclusion of our programmatic convocation meeting. In addition, the vascular program information shared with our clinical affiliates and advisory board members as meeting minutes.

Interpretation: A complete and clear narration and analysis of the assessment results were found in the vascular faculty, advisory board, and annual clinical instructors meeting minutes. Interpretations of results seem reasonable and at time no changes are needed programmatically.

Summary of 2019-2020 Assessment Activities

Student Learrning Outcome	*Assessment Method*	*Course*	*F - Foundation* *P – Practice* *C - Capstone*
PSLO # 1 - The student will demonstrate the ability to communicate effectively in oral, written and visual forms.	**Direct Assessment Grading Rubric Preliminary Report**	**VAS 388 & 367**	**Practice**
	Direct Assessment Extern Competency	**VAS 420**	**Capstone**
	Indirect Assessment Extern Survey	**VAS 420**	**Capstone**
PSLO # 2 - The student will demonstrate the ability to work effectively in teams.	**Direct Assessment Exam Questions-Multiple Choice**	**VAS 385**	**Practice**
	Direct Assessment Extern Competency	**VAS 420**	**Capstone**
	Indirect Assessment Extern Survey	**VAS 420**	**Capstone**
PSLO # 3 - The student will demonstrate an ability to provide basic patient care and comfort.	**Direct Assessment Exam Questions-Multiple Choice**	**MIT 225**	**Practice**
	Direct Assessment Extern Competency	**VAS 420**	**Capstone**
	Indirect Assessment Extern Survey	**VAS 420**	**Capstone**

Table 5

Student Learning Outcome #1: The student will demonstrate the ability to communicate effectively in oral, written and visual forms.

The Vascular Technology faculty conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome in the Vascular Technology courses can be found in Appendix A, Student Learning Outcome-Course Matrices Table A1.

Direct Assessment #1
The faculty assessed this outcome using a preliminary report assignment presented to 20 students in the VAS 388 course, spring term, for the preliminary reporting of oral and written components, and due to the COVID 19 restrictions, the visual communication piece was created and administered in the VAS 367 course, also spring term. A rubric designed to evaluate oral, written and visual components ranked student performance on a 1-4 point scale. The faculty rated the proficiency of students using the rubric for the oral assignment in Table #6 below.

Performance Criteria	Assessment Methods	Measurement Scale	Minimum Acceptable Performance	Results
Oral	Grading Rubric	1-4 scale per rubric proficiency criteria	90% with 3.0 or higher	95%
Written	Grading Rubric	1-4 scale per rubric proficiency criteria	90% with 3.0 or higher	100%
Visual	Grading Rubric	1-4 scale per rubric proficiency criteria	90% with 3.0 or higher	90%

Table 6

Students performed at or above expectations in all three categories. Although students had performed at most acceptable levels, their confidence in their ability to communicate effectively in especially written and oral communication in the hospital/clinical setting, was not high while on campus. As is evidenced in the indirect assessment for PSLO #1 below, students were most satisfied and confident with their communication ability by the end of extern.

As a result of the data, the vascular faculty had agreed to maintain the same rigor of requiring students to write and report oral preliminary findings at a foundational level in sophomore core course labs and at a performance level in junior core course level labs.

Direct Assessment #2

The faculty also assessed this outcome in VAS 420, from the 2019-2020 academic year, using randomly selected student competencies from 21 students where outcome #1 was assessed by industry. The faculty rated the proficiency of students used in the performance criteria described in Table #7 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Maintains Clinical Records	Student Competency Evaluation #1, a.	1 – 100% Scale	90% with 85% or higher	90%
Oral and Written Summary of Clinical Findings	Student Competency Evaluation #1, b.	1 – 100% Scale	90% with 85% or higher	89%
Appropriate use of medical terminology, abbr. etc.	Student Competency Evaluation #1, c.	1 – 100% Scale	90% with 85% or higher	90%
Educates Patients and other Health Care Providers	Student Competency Evaluation #1, d.	1 – 100% Scale	90% with 85% or higher	90%

Table 7

Students performed at or slightly below expectations in all criteria for PSLO #1 while on extern. Some of the low scoring was due to the fact that some of the new affiliate clinical instructors tend to grade low in the reporting system known as Trajecsys. Once they understand how percentages relate to written phrase grading categories, they tend to grade higher. When clinical instructors were asked during clinical site visitations regarding how well the extern students had performed on all aspects of PSLO #1, the overwhelming consensus was that extern students were performing at a most satisfactory level.

As a result of the data, the vascular faculty agreed to maintain the same rigor of preliminary report writing, oral preliminary reporting by phone recordings and visual communication included in preliminary report drawings included in CoreStudy worksheets.

Indirect Assessment #1

The faculty assessed this outcome in VAS 420, from the student 2018-19 academic year extern exit surveys of 14 students, asking them to rate how well the OIT Vascular Technology program and their extern site prepared them for learning outcome #1. Student rating is described in Table #8 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Student rating of how OIT prepared them for outcome #1.	Exit Survey	1 – 4 Scale	90% with a rating of 3 or higher	100%
Student rating of how their extern site prepared them for outcome #1.	Exit survey	1 – 4 Scale	90% with a rating of 3 or higher	100%

Table 8

Students had rated their training for PSLO #1 with overwhelming satisfaction. Students, while on campus, may question their confidence in being able to competently communicate, written, orally and visually in the clinical setting prior to embarking upon their extern experience, but the combination of on-campus, assessment inspired, additional communication requirements coupled with the "real-world" experience and training on extern brings our students to a high level of confidence by graduation.

As a result of the data, the vascular faculty was most confident in the decision to have increased, as a matter of assessment implementation, the increase of preliminary report writing, oral preliminary reporting by phone recordings and visual communication included in preliminary report drawings included in CoreStudy worksheets.

B. Student Learning Outcome #2: The student will demonstrate the ability to work effectively in teams.

The Vascular Technology faculty conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome in the Vascular Technology courses can be found in Appendix A, Student Learning Outcome-Course Matrices Table A1.

Direct Assessment #1
The faculty assessed this outcome with 20 students in VAS 385 during Spring term 2020 using a team project to design a vascular lab. The faculty rated the proficiency of students using surveys both for faculty and students as provided per the Teamwork ESLO to be conducted institutionally for 2019-2020 academic year in Table #9 below.

Performance Criteria	Assessment Methods	Measurement Scale	Minimum Acceptable Performance	Results
Achieves Goal/ Purpose	Grading Rubric	1-4 scale per rubric proficiency criteria	90% with 3.0 or more correct	100%
Assumes Roles & Responsiblities	Grading Rubric	1-4 scale per rubric proficiency criteria	90% with 3.0 or more correct	95%
Communicates Effectively	Grading Rubric	1-4 scale per rubric proficiency criteria	90% with 3.0 or more correct	90%
Reconciles Disagreements	Grading Rubric	1-4 scale per rubric proficiency criteria	90% with 3.0 or more correct	100%
Shares Work Appropriately	Grading Rubric	1-4 scale per rubric proficiency criteria	90% with 3.0 or more correct	100%
Develops Strategies/ Actions	Grading Rubric	1-4 scale per rubric proficiency criteria	90% with 3.0 or more correct	100%
Cultural Adaptation	Grading Rubric	1-4 scale per rubric proficiency criteria	90% with 3.0 or more correct	100%

Table 9

Students performed at or above expectations in all categories

The vascular faculty met and agreed that students in our vascular program both come with a sense they will be involved in teamwork activities and are most open to the teamwork education we provide. As is typical, some students in group activities take their responsibilities seriously and some do not with usually the minority taking the bulk of responsibility. Although we encourage better participation, we know this is a human trait difficulty to eliminate with education alone

Direct Assessment #2

The faculty also assessed this outcome with 21 students in VAS 420 from the 2019-2020 academic year, Spring term, using randomly selected student competencies where outcome #2 is assessed by industry. The faculty rely on industry (clinical instructor) rating the proficiency of students used in the performance criteria described in Table #10 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Recognizes role as a vascular lab team member.	Student Competency Evaluation #2, $a_{1.}$	1 – 100% Scale	85% with 90% or higher	90%
Demonstrates initiative in vascular lab team effort	Student Competency Evaluation #2, $a_{2.}$	1 – 100% Scale	85% with 90% or higher	90%
Gathers appropriate quality assurance data for vascular lab team effort	Student Competency Evaluation #2, b.	1 – 100% Scale	85% with 90% or higher	94%
Works effectively as a team member on vascular lab projects	Student Competency Evaluation #2, c.	1 – 100% Scale	85% with 90% or higher	100%

Table 10

Students performed above expectations in all categories

The vascular faculty met and agreed that students in our vascular program both come with a sense they will be involved in teamwork activities. The senior students while on extern learn group activity by doing their fair share of the vascular lab patient load, cleaning patient rooms between exams, stocking linens on shelves and taking part in quality assurance activities. Industry rates our student abilities to contribute to the vascular lab team efforts quite well.

Indirect Assessment #2

The faculty will assess this outcome with 14 students in VAS 420 from the student 2019 exit surveys asking them to rate how well the OIT Vascular Technology program and their extern site prepared them for this learning outcome #2. The students will rate the proficiency of students used in the performance criteria described in Table #11 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Student rating of how OIT prepared them for outcome #2.	Exit Survey	1 – 4 Scale	80% with a rating of 4.0 or better	100%
Student rating of how their extern site prepared them for outcome #2.	Exit survey	1 – 4 Scale	80% with a rating of 4.0 or better	100%

Table 11

Students rated their satisfaction above expectations both at Oregon Tech and at their site.

As a result of the data, the Oregon Tech vascular technology faculty agree students like teamwork activities as long as the level of responsibility is not too demanding.

C. Student Learning Outcome #3. The student will demonstrate an ability to provide basic patient care and comfort.

The Vascular Technology faculty conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome in the Vascular Technology courses can be found in Appendix A, Student Learning Outcome-Course Matrices Table A1.

Direct Assessment #1

The faculty assessed this outcome with 20 students in the fall term MIT 225 Patient Management Practices course using select questions from the final exam. The faculty rated the proficiency of students using the performance criteria described in Table #12 below.

Performance Criteria	Assessment Methods	Measurement Scale	Minimum Acceptable Performance	Results
Ergonomics and Technologist/Patient Safety	Final Exam	% Scale per 3 questions used	80% with 2 or more correct	100%
Knowledge of Communication Skills	Final Exam	% Scale per 3 questions used	80% with 2 or more correct	97%
Infection Control	Final Exam	% Scale per 3 questions used	80% with 2 or more correct	100%
Sonographer Professionalism and Ethics	Final Exam	% Scale per 3 questions used	80% with 2 or more correct	100%

Table 12

Students performed above expectations in all areas.

The vascular faculty met and agreed patient management care as taught on the Oregon Tech campus absolutely meets the requirements of the field and the additional activities of drawing blood, moving patients to facilitate transport and requiring clinical rotations at Sky Lakes Medical Center have been most complimentary. Students can still improve in regard to anticipating patient needs, but they are green and new to the field.

Direct Assessment #2

The faculty also assessed this outcome with 14 students in the VAS 420 Extern course from the 2019–2020 academic year using random student competencies as assessed by industry. The faculty rated the proficiency of students using the performance criteria described in Table #13 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with 90% or higher
Knowledge of Universal Precautions	Student Competency Evaluation #3, a.	1 – 100% Scale	80% with 90% or higher	100%
Anticipates/ responds to patient needs.	Student Competency Evaluation #3, b.	1 – 100% Scale	80% with 90% or higher	95%
Knowledge of HIPAA Policies	Student Competency Evaluation #3, d.	1 – 100% Scale	80% with 90% or higher	95%
Performs Within the Vascular Scope of Practice	Student Competency Evaluation #3, e.	1 – 100% Scale	80% with 90% or higher	95%

Table 13

Students performed above expectations in all areas.

The vascular faculty met and agreed patient management care as taught on the Oregon Tech campus absolutely meets the requirements of the field and that recent added activities of drawing blood, moving patients to facilitate transport and requiring clinical rotations at Sky Lakes Medical Center have been most complimentary. Students can still improve in regard to anticipating patient needs, but the benefit of having students spend a full eleven months on extern has made them most competent for this learning outcome.

Indirect Assessment #1

The faculty assessed this outcome with 17 students in VAS 420 Extern course using student 2019 exit surveys which asked them to rate how well the OIT Vascular Technology program and their extern site prepared them for this learning outcome #3. The students rated their proficiency using the performance criteria described in Table #14 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Student rating of how OIT prepared them for outcome #3.	Exit Survey	1 – 4 Scale	80% with a score of 3.0 or better	100%
Student rating of how their extern site prepared them for outcome #3.	Exit survey	1 – 4 Scale	80% with a score of 3.0 or better	100%

Table 14

Students rated themselves above expectations for education in patient care both from their extern site and from Oregon tech.

As a result of the data, the vascular technology faculty had agreed to maintain the same level of rigor as is included in Patient Management Practices and in all of our VAS prefix labs.

Section 7 – Data-driven Action Plans: Changes Resulting from Assessment

Student Learning Outcome #1: The student will demonstrate the ability to communicate effectively in oral, written and visual forms.

Strengths: Activities conducted on-campus demonstrated students capable of performing well with all forms of communication, but, as has been evidenced over the years, some students had some apprehension of how they would perform in the actual healthcare setting. Students on extern were rated most excellently by industry regarding their communication skills and performance.

Areas needing improvement: None at this time (see Closing the Loop summation in section 7).

Plans for improvement: The exercise conducted on-campus in the VAS 367 course appeared to be meeting the need for students understanding how they can communicate well. Because of the success of this exercise, the vascular faculty has agreed to maintain its use and to include similar exercises in the Junior level program courses

Student Learning Outcome #2: The student will demonstrate the ability to work effectively in teams.

Strengths: Industry rated extern students most satisfactorily as to how well Oregon Tech prepares vascular students for the teamwork activity required in the field. Although vascular industry regarded our extern students as demonstrating good teamwork values, some also demonstrated an attitude of minimalism in their willingness to carry out teamwork activities.

Plans for improvement: None at this time other than making comment of avoiding minimalism as a part of on-campus vascular lab activities.

Student Learning Outcome # 3: The student will demonstrate an ability to provide basic patient care and comfort.

Strengths: Both on campus students and senior extern students performed above expectations for all performance criteria. New information had been included for the on-campus VAS 225 course and for patient management rotations at our local hospital Sky Lakes Medical Center.

Areas needing improvement: None at this time.

Section 8 – Closing the Loop: Evidence of Improvement in Student Learning.

From the 2013-2014 **PSLO #1** indirect assessment activity, exit surveys from senior extern students rated the vascular program quite low (only 50% with the target or higher) for how they were prepared for this outcome.

Action Item implemented: As a result of the data, the faculty felt confident students commented they needed to have more practice being a part of the diagnostic process while here on campus in order to both write preliminary reports better and to communicate better orally to doctors when on extern."

From the 2016-2017 **PSLO #1** indirect assessment activity, exit surveys from senior extern students rated the vascular program at 100% with the target or higher. Although the action item implemented was successful, the vascular faculty agreed students continued to struggle with insecurity in the field. Learning how each physician, whether a vascular or general practice physician, wants to have information disseminated takes a bit of effort. We therefore decided to have students write more and more preliminary reports while on campus which provides a basis to build upon.

From the 2019-2020 **PSLO #1** indirect assessment activity, exit surveys from senior extern students again rated the vascular program at 100% with the target or higher. The vascular faculty agreed the original action item combined with the increase in preliminary report writing and preliminary phone call recordings had brought students to the level where they have felt confident with their training from the vascular program to communicate competently during their senior extern experience. The vascular faculty concluded the current rigor of the action item was satisfactory, would be maintained in the program and therefore this assessment activity did indeed close the loop for PSLO#1.

Appendix:

A. Grading rubic PSLO #1 for direct assessment #1

VAS 367:
Visual, Written & Oral Preliminary Reporting Assignment

	Performance Criteria	Limited Proficiency (1 pt.)	Developing Proficiency (2 pts.)	Proficiency (3 pts.)	High Proficiency (4 pts.)
(I)	**Visual Communication**	7 of the 10 required positioning pictures	8 of the 10 required positioning pictures	9 of the 10 required positioning pictures	Cell phone pics. - using a pseudo-probe in transverse position for: 1). Low common carotid A. (CCA), 2). Carotid bifurcation, 3). Beyond the bifurcation, and then in long axis position for: 4). Low CCA, 5). Distal CCA, 6). Proximal internal CA (ICA), 7). Carotid bulb sweep image, 8). Prox. ICA, 9). Mid ICA, 10). and Distal ICA.
(C)	**Written Communication**	1 of 4 report components were mentioned in oral report	2 of 4 report components were mentioned in oral report	3 of 4 report components were mentioned in oral report	1). Important findings first, 2). extent of disease, 3).emergent condition was reported and 4). normal findings were reported as well
(E)	**Oral Communication**	1 of 4 report components were mentioned in oral report	2 of 4 report components were mentioned in oral report	3 of 4 report components were mentioned in oral report	1). ID-introduction, 2).acute/occlusive disease mentioned, 3). extent of disease, 4).emergent condition was reported

B. Sample competency form with all 9 vascular program PSLO's in bold lettering:

Vascular Student M 09/18/20 Competency Evaluation Vascular Studies Lower Extremity Venous - incl. IVC and Iliacs

Displays increased proficiency	**The student will demonstrate the ability to communicate effectively in oral, written and visual forms.**
	- Maintains clinical records.
Displays increased proficiency	- Interacts with interpreting and/or referring physician with oral and written summary of physiologic and ultrasound image findings (as required by lab protocols).
Displays increased proficiency	- Comprehends and employs appropriate medical terminology, abbreviations, symbols, terms and phrases.
N/A	- Educates other health providers and the patient in the appropriate

	applications of ultrasound diagnostic vascular evaluations.
Making progress (passing)	**The student will demonstrate the ability to work effectively in teams.** - Student recognizes his/her role as a student and displays initiative in helping in the daily vascular lab team effort.
At expected level of progress	- Student is willing to gather appropriate data for the team effort of quality assurance.
At expected level of progress	- Student ability to function as a two person team with their clinical trainer.
Exceeds expectations	**The student will demonstrate an ability to provide basic patient care and comfort.** - Maintains infection control and utilizes universal precautions.
Very proficient	- Anticipates and is able to respond to patient needs.
Very proficient	- Identifies potential life-threatening situations and responds appropriately.
Excellent	- Student abides by all requirements of the Health Insurance Portability and Accountability Act.
Exceeds expectations	- Performs within the scope of practice and adheres to the professional codes of conduct/ethics.
At expected level of progress	**The student will employ professional judgment and discretion.** - Student demonstrates a professional bedside manner.
N/A	- Student recognizes when a patient's presenting symptoms are not in keeping with the exam ordered and will contact the referring physician's office or the clinical instructor for exam type verification.
Very proficient	- Student avoids involvement in vascular lab politics and does not engage in negative conversation.
Exceeds expectations	**The student will demonstrate knowledge and understanding of human gross anatomy, sectional anatomy and normal and abnormal vascular anatomy.** - Is able to associate anatomical landmarks in the region of interest with vascular anatomy.
N/A	- Is able to accurately identify cross sectional vascular anatomy in ultrasound images as well as in radiologic, CT and MRI images for quality assurance.
Very proficient	- Recognizes the sonographic appearance of normal and abnormal vascular anatomy.
Very proficient	**The student will demonstrate knowledge and understanding of vascular physiology, pathology, and pathophysiology.**

	- Obtains and evaluates pertinent patient history.
Very proficient	- Performs physical examination and evaluates its results.
N/A	- Performs appropriate physiological tests and evaluates results.
Very proficient	- Correctly recognizes and identifies patient pathology.
N/A	- Extends standard testing protocols as required by the findings.
Displays increased proficiency	- Reviews data from previous examination or findings from other modalities.
Very proficient	**The student will demonstrate knowledge and understanding of vascular physical principles and instrumentation.**
	- Selects appropriate technique(s) for examination.
Very proficient	- Adjusts instrument controls to optimize image quality.
Very proficient	- Takes appropriate measurements.
Very proficient	- Recognizes and compensates for acoustic artifacts.
Exceeds expectations	- Understands probability of biological effects and minimizes patient exposure to acoustic energy.
Displays increased proficiency	**The student will demonstrate knowledge and understanding of clinical vascular diagnostic procedures and testing.**
	- Correlates abnormal test results to the patient history, including demographics, and physical data to answer the clinical question.
Displays increased proficiency	- Not only considers general pathological assumptions as being the cause of abnormal test results and waveforms, but also considers other possibilities (such as low cardiac output, extrinsic vessel compression, dissection, etc.) or differential diagnosis.
Displays increased proficiency	- Is able to evaluate diagnostic implications regarding what abnormal spectral waveforms mean and/or could mean.
Displays increased proficiency	- Is able to answer the clinical question.
Displays increased proficiency	- Student ability to write the actual preliminary report accurately or write an accurate mock preliminary report.
Very proficient	**The student will demonstrate an understanding of diverse cultural and humanistic traditions in the global society.**
	- Student appropriately works with interpreters to gather an accurate

	patient history.
Very proficient	- Student avoids demonstration of prejudice toward anyone in his/her extern experience.
Very proficient	- Student recognizes patients from other ethnic backgrounds have different attitudes toward healthcare and healing.
Enter	**Student Comments and Signature**: Student may add comments and signature by attaching a post-submission comment. Student also will indicate whether he/she concurs with results of this evaluation and provide reasonable and/or convincing reasons why a score given is unfair or not accurate. To do so, student logs in using his/her user name and password. Then, go to Reports/Skill Summary. Click on date of Comp which brings up results. Scroll to bottom and click plus sign (+) next to Add Comment. Select the Student signature item at the bottom of the dropdown and type signature in text box. Click Add to complete.
88.12	**Total** (Item point changes: 0 Overall point changes: 0)
Approved by XXXXXXXXXXX	

Student and Industry exit surveys based solely on the vascular program's nine PSLO's:

Oregon Institute of Technology
Student Clinical Site Evaluation

Student Name _____

Clinical Site _____ Date_____

Please evaluate your externship site in every category based on the following scale:
(1) Poor (2) Satisfactory (3) Good (4) Excellent (n/a) Not apply

This evaluation will not affect ;your grade and will be kept confidential.

1. The student will demonstrate the ability to communicate effectively in oral, written and visual forms. (1) (2) (3) (4)

2. The student will demonstrate the ability to work effectively in teams. (1) (2) (3) (4)

3. The student will demonstrate an ability to provide basic patient care and comfort. (1) (2) (3) (4)

4. The student will employ professional judgment and discretion. (1) (2) (3) (4)

5. The student will demonstrate knowledge and understanding of human gross anatomy, sectional anatomy and normal and abnormal vascular anatomy. (1) (2) (3) (4)

6. The student will demonstrate knowledge and understanding of vascular physiology, pathology, and pathophysiology. (1) (2) (3) (4)

7. The student will demonstrate knowledge and understanding of vascular physical principles and instrumentation. (1) (2) (3) (4)

8. The student will demonstrate knowledge and understanding of clinical vascular diagnostic procedures and testing. (1) (2) (3) (4)

9. The student will demonstrate an understanding of diverse cultural

and humanistic traditions in the global society. (1) (2) (3) (4)

For any score you awarded below a 3, we would like you to provide constructive criticism:

Oregon Institute of Technology
Clinical Site Program Evaluation

Clinical Site _____

Date _____

This survey is designed to help us improve the quality of education in our program. Clinical Instructors of each externship site should evaluate the Oregon Institute of Technology Vascular Technology program. Please use the following scale:

(1) Poor (2) Satisfactory (3) Good (4) Excellent (n/a) Not apply

1. The student will demonstrate the ability to communicate effectively in oral, written and visual forms. (1) (2) (3) (4)

2. The student will demonstrate the ability to work effectively in teams. (1) (2) (3) (4)

3. The student will demonstrate an ability to provide basic patient care and comfort. (1) (2) (3) (4)

4. The student will employ professional judgment and discretion. (1) (2) (3) (4)

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7. The student will demonstrate knowledge and understanding of vascular physical principles and instrumentation. (1) (2) (3) (4)

8. The student will demonstrate knowledge and understanding of clinical vascular diagnostic procedures and testing. (1) (2) (3) (4)

9. The student will demonstrate an understanding of diverse cultural and humanistic traditions in the global society. (1) (2) (3) (4)

For any score you awarded below a 3, we would like you to provide constructive criticism:

Oregon Institute of Technology
Student Program Evaluation

Student _____ Date _____

This survey is designed to help us improve the quality of education in our program. Each student should evaluate the Oregon Institute of Technology Vascular Technology program. Please use the following scale:

(1) Poor (2) Satisfactory (3) Good (4) Excellent

1. The student will demonstrate the ability to communicate effectively in oral, written and visual forms. (1) (2) (3) (4)

2. The student will demonstrate the ability to work effectively in teams. (1) (2) (3) (4)

3. The student will demonstrate an ability to provide basic patient care and comfort. (1) (2) (3) (4)

4. The student will employ professional judgment and discretion. (1) (2) (3) (4)

5. The student will demonstrate knowledge and understanding of human gross anatomy, sectional anatomy and normal and abnormal vascular anatomy. (1) (2) (3) (4)

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For any score you awarded below a 3, we would like you to provide constructive criticism: